SAFER CYCLING ROUTES TO THE UNIVERSITY: ANALYSIS OF CONFLICTS BETWEEN MOTOR VEHICLES AND BICYCLES

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MSc. Dissertation

One of the most relevant arguments given by people for not regularly use the bicycle is the lack of safety. The increase of the number of bicycles on the road infrastructure leads to the existence of conflicts with motor vehicles, and simultaneously has negative impacts on traffic performance levels.

This Dissertation was focused on the use of appropriate modeling methodologies to understand the effects of cycling-oriented measures on both traffic performance and cyclist safety. VISSIM and SSAM modeling platforms were used, to quantify traffic performance parameters and road conflicts (both in terms of number and type), respectively. The analysis was done at three different routes used by cyclists to an University Campus in the city of Aveiro (Portugal), and considering three different scenarios: S1, separate bicycle lanes were implemented along all routes; S2, the number of bicycles increased by 10 times compared to the existing conditions (baseline scenario); and S3, adoption of 30 km/h speed zones.

The research also identified the locations along the study domain where vehicle-bicycle conflicts were consistently high (hotspots).

KEYWORDS: Bicycles, Motor vehicles, Road conflicts, Traffic Performance.

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